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ABSTRACT

A longitudinal study examined the relationship between the emergent literacy knowledge of preschool entrants and their subsequent reading performance, 5 years later. Subjects were selected randomly for the preliminary class lists of 6 separate preschools located in a mid-size midwestern city. Within the first 4 weeks of preschool, 8 informal measures were individually administered to 64 subjects. A questionnaire was individually administered to all parents to assess the frequency and type of literacy practices they used with their children. Five years later, 57 subjects were located and their scores on the Iowa Tests of Basic Skills were acquired. Results indicated that (1) virtually all 4-year-olds who entered preschool with advanced knowledge about print or rich literacy experiences became good readers 5 years later, while many of their counterparts who came with restricted knowledge or experiences ended up struggling; (2) about three-fourths of the preschool enrollees with scores in the lowest quartiles showed unsatisfactory performance in reading by third grade; (3) all preschoolers could identify a majority of the environmental print pictures, logos, and literacy artifacts; (4) the most advanced preschool enrollees demonstrated a broad familiarity with alphabetic symbols, while the least advanced preschoolers showed little awareness of letters; and (5) many parents, particularly lower-income, still held the notion that learning to read is something children learn in elementary school. (Contains 25 references, 1 table and 1 figure of data.) (RS)

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A Longitudinal Study: The Literacy Development of 57 Children

Running Head: Literacy Development

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A Longitudinal Study: The Literacy Development of 57 Children

Theoretical and Conceptual Rationale

Longitudinal investigations of children's reading development have been the focus of several important studies. A question of primary interest has been whether or not children identified as good and poor readers remained in these categories years later. Clay (1979) reported on a study of 100 children who began reading instruction at age five. She found that the reading level of a child at the end of his first year of school to be "roughly where one could expect to find him at 7.00 or 8.00" (p. 13). In a Swedish study, Lundberg (1984) found that among 46 first graders with low reading achievement scores, 40 (87%) were still poor readers in sixth grade. Juel (1988) examined the reading and writing development of children as they progressed from first through fourth grade. Her findings showed that children who were poor readers at the end of first grade were almost invariably at this same status by the end of fourth grade (r = .88). Specifically, 21 of the 24 children who scored in the lowest quartile on the reading comprehension subtest of the Iowa Test of Basic Skills (ITBS) were reading at least six months below an appropriate grade equivalent. Juel concluded, "It is unlikely that as poor readers get older they will change" (p. 444). The 1985 report from the National Assessment of Educational Progress also indicated that good 9-year old readers remained good readers throughout their secondary years. Overall, researchers have suggested that elementary children's early reading ability is a good predictor of later reading achievement.

More recently, the emergent literacy paradigm has proposed that reading acquisition begins long before children enroll in first grade (e.g., Mason, 1984; Read, 1971; Teale & Sulzby, 1986). As Teale (1987) stated, "emergent literacy should be thought of as learning prior to formal school instruction" (p. 45). Within the context of home and community young children learn about print through socially meaningful experiences with print. Behaviors of looking at books, attempting to write, and noticing alphabetic letters and words are considered legitimate aspects of "the ontogeny of literacy " (Teale, 1987; p.46). For children too young to go to school, the literacy interactions at home appear to form an important foundation for learning to read. Indeed, the notion that young children's rich connections with print lead to successful reading is popular among reading experts, but the empirical evidence is limited.

In past years, several notable ethnographic studies have provided rich details about the early experiences young children have had with print (e.g., Heath, 1983; Teale, 1986). Particular attention has been given to the practices used by parents. Authors suggest that virtually all children, even those from economically poor homes, have numerous interactions with written language as a result of living in a literate society. Nonetheless, the troublesome differences in children's reading performance by elementary school are well known. Lower-income children are disproportionately represented in the lowest quartiles of standardized reading tests in the primary grades. Given the new paradigm of reading development, what would be the prognosis for four-year-olds who enter preschool with limited or advanced knowledge of emergent literacy? Moreover, when young children's acquisition of reading is examined will parents' early literacy practices and economic status play substantial roles?

For this investigation, I conducted a longitudinal study that examined the relationship between the emergent literacy knowledge of preschool entrants and their subsequent reading performance, five-years later. I also examined the academic performance of preschoolers who held the least and most literacy knowledge to determine if important emergent literacy concepts could be identified. In addition, parent responses to questions about their children's literacy interactions prior to attending preschool were reviewed. Finally, I compared the reading development of lower- and middle-income children in the hopes of gaining a richer understanding about what may impair the literacy acquisition of many children from impoverished homes.

Methodology

Procedures

The study was initiated by randomly selecting the names of four-year-olds from the preliminary class lists of six separate preschools. The preschools were located in a mid-size, midwestern city. Each preschool was selected because of the particular population it served. Three were federally funded Head Start programs serving families below the poverty level; three were tuition-based programs serving children from middle-income homes. An initial task of word recognition was administered to eliminate children who had already begun to read. Within the first four-weeks of preschool, eight informal measures were individually administered to 64 subjects. The assessment tasks measured

preschoolers' emergent literacy knowledge. All measures were presented to children in two sessions, each lasting approximately 20 minutes. A questionnaire was also individually administered to all parents to assess the frequency and type of literacy practices they used with their children.

In the years following preschool, correspondence was sent annually to the children's parents in an effort to maintain contact. The letters contained brief questionnaires and requests for new addresses and phone numbers; stamped, self addressed envelopes were enclosed. Nonetheless, a variety of situations and sometimes difficulties arose for many families. As a result, notification of pertinent updated information was frequently not received (e.g., one family moved nine times in one year). Therefore, five years later, I conducted an extensive search in an attempt to locate all of the original subjects. Fifty-seven subjects were found enrolled in 32 separate public and private elementary schools in 17 different school districts.

School district administrators were initially apprised of the research study and subsequent contacts were conducted with parents, teachers and testing officials of the target children. I collected the following information about the students' current school performance: 1) retention rates, 2) frequency of placement in compensatory reading, math, and special education programs, 3) teacher evaluations of target students' current reading performance, and 4) standardized test scores in reading. Follow-up phone contact was also initiated with several teachers and parents to secure further information about children's academic performance.

Participants

At the outset of the study, only four-year-old, nonreaders, who spoke English as their primary language were invited to participate. Among the 57 subjects, 27 represented middle-class and 30 represented lower-income homes. The middle-class preschoolers attended private neighborhood centers while lower-income children, qualified as living at or below poverty level, attended Head Start programs. About half of the mothers of lower-income subjects had earned a high school diploma or the equivalent (56%) , but none had earned a college degree. All but two of the middle-class mothers had attended college, with the majority (67%) having completed a bachelor's degree. Twenty were male and 37 were female.

Materials

All children were administered a word recognition test comprised of 15 preprimer words taken from a popular basal series. Words were presented individually on 3 x 5 cards. The cut-off criterion for participating in the study was the ability to successfully read more than one word; none could. The preschool literacy assessment consisted of eight informal measures that tap Mason's (1984) Strands of beginning reading acquisition. Accordingly, these strands reflect the early concepts needed for understanding reading. The initial strand, function of print, is described by Mason as, when children use context or apparent meanings in their attempts to read words, logos, and artifacts. The literacy measures administered for Strand 1 were the following: 1) recognizing environmental print, 2) identifying literacy artifacts by name, 3) explaining the function of the literacy artifacts, and 4) distinguishing real words when presented with displays of printed symbols.

I measured recognition of environmental print by showing children ten 4 x 5 color photographs of familiar logos. The logos were selected from studies reporting environmental print frequently recognized by prereaders (Heibert, 1978; Masonheimer, Drum, & Ehri, 1984). Clear photographs of the logos appearing in context were presented individually. With each photograph, the child was asked, "Tell me what this says." The 10 photographs consisted of pictures of a McDonald's sign, stop sign, K-Mart sign, Coke cup, Crayola box, Burger King sign, speed limit sign, school bus, Target sign, and a Pepsi can. One point was awarded for each correct answer (total points = 10).

Preschoolers' knowledge of literacy artifacts was assessed by asking them to identify the name of selected objects. The objects included a newspaper, telephone book, menu, map, dictionary, checkbook, calendar, coupon, receipt, and a postcard (total points = 10). In addition, the task was repeated and children were asked to explain the function of the artifacts (total points = 10). For each object presented, the child was asked, "What is this? What do people use this for?" Prompting was used ("Tell me more") and all responses were recorded verbatim.

For the final task in Strand 1, I showed preschoolers 5 x 8 cards with strings of letters, scribbles, sometimes numbers, printed on each card (e.g., too, 57M8R, I, etc.). With each presentation, I asked, "Is this a word that big people read?" The task, designed from work reported by Lavine (1977) and Ferriero

and Teberosky (1982) was used to examine what prereaders' perceive as readable print. The task examined, more specifically, whether variety (words must be composed of different letters), multiplicity (words must be composed of enough letters), and directionality (words must appear horizontally) of print influence children's concept of what people can read (total points = 15).

The second strand, form and structure of print, is described by Mason, as a child's explicit awareness that words are made up of symbols with distinct forms and can be related to word sounds. This includes knowledge of the names and sounds of letters and concepts about combining sounds to form words. For Strand 2, the following measures were administered: 1) naming the alphabetic letters, 2) identifying the sounds of alphabetic letters, 3) blending syllables and phonemes into words, and 4) writing six dictated words or phrases .

Knowledge of letter names was measured by asking children to identify the names of lowercase letters when presented on 3 x 5 cards (total points = 26). All cards were placed on the floor in front of the child. I began the task by selecting the first letter of the child's first name and asking, "Can you tell me the name of this letter?" Each child was then asked to select any letter and give the name. Positive responses were provided to all of the children's responses. However, once a child reached five consecutive errors, the task was stopped. The same procedures were repeated in another session to assess children's explicit knowledge of letter sounds (total points = 26).

I also examined preschoolers' ability to write dictated words and short phrases using a modified version of a task adopted by Kontos (1988). The task was selected because it taps the broad range of abilities found among young children's early writing attempts. Scores reflect the variability, from the less sophisticated scribbles or pictures to the more advanced letter-like and alphabetic symbols (Huba, Robinson, & Eltinge, 1990). Children were given a blank sheet of paper and a pencil. Six utterances (each a word or short phrase) were individually read and the children were asked to "write down on paper in any way that will help you to remember them." The utterances were the child's name, and the words and phrases cat, red car, my mom, big frog, and spooky ghost. Each of the six items was scored from 0 to 8 (total points = 48) for sophistication of spelling productions, using criteria suggested by Clay

(1975). Writing samples were judged independently by two teachers of early childhood education. Interrater reliability was .93.

In the final task for Strand 2, preschoolers were asked to combine sound segments (syllables and then phonemes) into real words. In past research, 4 - year-olds have demonstrated success in blending syllables into words, while blending phonemes was very difficult (Fox & Routh, 1975). The ability to manipulate sounds in words has been reported as an important prerequisite to learning to read (e.g., Blachman 1991). Before beginning the task, children practiced using syllables. I told them, "I'm going to say words in a funny way. You'll need to listen carefully and try and figure out what I'm saying...For example, if I say /gir/ /aff/ (pausing between the two syllables), the word I'm saying is...giraffe. Can you put the sounds together and tell me what I'm saying?" After two successful trials, the isolated syllables in the following words were presented: zebra, elbow, table, pencil, and funny. Following another practice activity with phonemes, the task was repeated using words comprised of two phonemes (e.g., tea, may, sea, so, and knee; total points = 10).

A literacy questionnaire consisting of 65 questions was also administered to all preschool parents (see Smith & Dixon, 1995). The questionnaire investigated the literacy practices and experiences that parents provided for their children. Parents were asked to determine how often they read to their preschooler, the materials children had access to in their home, their views about learning to read and write, and the role they took in their child's reading development.

Five years later, I contacted school administrators to acquire the standardized test scores of the target children on the IOWA Test of Basic Skills (ITBS: Hoover, Hieronymous, Frisbie, Dunbar, 1993). The third grade subtest scores for reading comprehension (Forms K and L) were acquired. The test measures children's ability to cull factual details and develop generalizations from sentences and passages. According to the test manual, parallel Forms K and L were directly equated to one another using an equivalent-samples design.

To provide a broader perspective of the children's current academic performance additional information about grade placement, special services, and current reading performance was obtained from classroom teachers and school records. Of particular note, teachers were asked to rate the current

reading level of the target child compared to the other third graders. Teacher rating of students' reading performance has been reported as a good criterion and used in several longitudinal studies (e.g., Fowle, 1989; Scalon, et al., 1993). A Likert scale that ranged from 1 to 5 was used. Teachers rated a child's reading level as 1 = reads well below grade level, 2 = reads slightly below grade level, 3 = reads at approximately grade level, 4 = reads slightly above grade level, or 5 = reads well above grade level.

Analyses

Frequencies for all variables were conducted. The individual literacy measures were combined to form two theoretical reading acquisition strands (Mason, 1984). A total literacy score and total parent score were also calculated for each subject for further analysis. Correlations were performed to examine the relationship between preschoolers' emergent literacy knowledge and experiences with subsequent reading performance criteria of standardized test scores (ITBS) and teacher evaluations. The school performance of children who earned the highest and lowest scores on the preschool assessment and parent questionnaires were also examined to further investigate early prognosis for reading success. T-tests were used to determine the significance of socioeconomic status on the dependent measures with an alpha level of .05. The profiles of the lowest and highest scoring preschoolers and, the lower-income and higher-income children, were further investigated to identify important emergent literacy concepts.

Results

Preschoolers' Emergent Literacy Knowledge

Table 1 shows the means and standard deviations for the 57 preschoolers' literacy knowledge and experiences. Scores for Mason's (1984) initial strand in reading acquisition ranged from 12 to 31 points. Strand 1 represented the preschoolers' earliest awareness of printed language and their ability to identify environmental print, logos, and literacy artifacts. Virtually all children showed some knowledge of the concepts measuring Strand 1. Scores for Strand 2, children's explicit knowledge of letters and words, varied greatly, from 7.00 to 77.00. The second strand reflected preschoolers' knowledge of letter names, letter sounds, their ability to blend syllables and phonemes into words, and their ability to write words and short phrases dictated to them. Most children could identify at least a

few letter names, blend syllables into words, and write their own names. However, identifying letter sounds and blending phonemes into words created the greatest difficulty for the preschoolers.

When the 57 subjects were divided by socioeconomic backgrounds, a significant difference was found between the two groups for Strand 1, $t(55) = -2.40$, $p = .02$. The means and standard deviation for the middle-class were 22.74 and 4.33 and 19.67 and 4.83 for lower-income. When the effects of socioeconomic status were analyzed for Strand 2, statistical significance was again found, $t(55) = -3.43$, $p=.00$. The means and standard deviations for middle-class were 34.11 and 18.30 and for lower-income 19.67 and 9.01. As a group, middle-class preschoolers significantly outperformed the lower- income cohort on Strands 1 and 2. Hence, one full year before entering kindergarten, substantial differences were found in the emergent literacy knowledge of children from different socioeconomic groups.

Preschoolers' Literacy Experiences

Scores for the literacy questionnaire administered to the preschool parents ranged from 16.00 to 44.00. The questionnaire asked parents about the literacy practices they used with their preschoolers. Of particular interest was how often parents read to their children. Slightly more than half (54%, n = 32) reported that they read every day to their preschoolers. The remaining preschoolers were read to considerably less; 20%, n = 11, indicated they read to their children only seldom or occasionally, another 25%, n = 14, indicated at least weekly. When children are read to, most parents (63%, n = 36) reported spending between 10 and 20 min. These findings support other reports (Wells, 1985) that about half of the young children entering schools have not been regularly read to by their parents.

When preschool parents did read to their children, the vast majority (83%, n = 46) allowed children to select the book. Descriptions of interactions during the reading sessions indicated that almost a third of the preschoolers (29%, n = 17) were not encourage to interrupt and talk about the stories. When preschool parents were asked about children's writing, 50% (n = 28) indicated that their child experimented with writing everyday. Only 28% (n = 16) indicated that writing experiences for their preschoolers occurred "occasionally" or "seldom".

In defining parents' roles in helping their children learn to read 52% (n = 30) reported that they believed their child would learn to read when they entered elementary school. One third (n = 19)

indicated that they would directly teach their children how to read. While 11% (n = 6) indicated that they would leave learning to read entirely up to the schools. Hence, parent perspectives reflected substantial differences in the early literacy experiences among the 57 children before entering preschool. This difference was particularly evident when the mean scores of parents from and middle SES (mean = 36.89, SD = 4.53) lower SES (mean = 28.71, SD = 6.41) were compared. Statistically significant differences existed in the literacy practices and materials used by middle- and lower- class families, t (55) = -5.47, p = .000.

The most alarming void reported in lower-income homes was the lack of frequent story book reading. While 81% (n = 22) of the middle-class parents reported reading to their preschoolers everyday an almost equal number of lower-income parents (73%, n = 22) reported reading to their children at best once a week. Forty-three percent of the impoverished parents (n = 13) selected "seldom" or "occasionally". In addition, when parents read to their children, the majority of lower-income parents reported spending considerably less time than their counterparts: 0 to 10 minutes verses 11 to 20 minutes. Thus, the vast majority of impoverished children in this study entered preschool having been read to less than 10 minutes per week. Ironically, when parents were asked about the value of reading to their children, all claimed they believed it would help children learn to read. Regarding literacy materials in the home, most reported having books (86%, n = 26) and paper and pencils (76%, n = 23). However, many could not name their child's favorite book (36%, n = 11). When books were identified they were often adult-level text, such as the Bible. Although parent responses undoubtedly reflected a "halo effect" that may be more pronounced among middle-class, the overall evidence was consistent. Parent responses showed less favorable early literacy experiences in the homes of poor children as compared to their middle- class age mates. Perhaps, the notion that learning to read is something that happens when you go to school perpetuates a less active role among parents.

Academic Performance in Elementary School

Retention. Five years after the initial preschool testing, the majority (93%) of 57 students had advanced to third grade. Only four had been retained, two females and two males. All four children had received an additional year of kindergarten. Three were from middle-class homes and the fourth

from the lower-income. As preschoolers, only two of the middle-class retainees showed a poor performance on the literacy assessments; one scored in the lowest 3% and the other scored in the lowest quartile on explicit literacy knowledge (Strand 2). None of the four had parents whose responses on the parent questionnaire indicated a deprivation in home literacy experiences.

A higher number of retentions had been expected among the lower-income group. Since they had shown statistically less knowledge of literacy, I expected this disadvantage would place them at greater risk than the middle-class group for retention. Nonetheless, in this study, three out of the four decisions to retain were initiated by middle-class parents. According to responses on the parent survey, three espoused that an extra year of kindergarten almost guaranteed academic benefits for their children. They explained further, in follow-up phone calls, that they believed that their children were at a serious disadvantage when entering school because of summer birthdays or in one case, because their child was "socially immature". A lack of knowledge about print was not a consideration. Rather, receiving an extra year of kindergarten was viewed as an effective way to reverse a negative situation, from youngest to oldest and from immature to more mature.

Special services. Five years after preschool, 35% (n = 20) of the subjects had been placed in compensatory programs for reading, math or special education. For services aimed exclusively at improving reading and math, eight children (14%) were enrolled in a reading clinic, four (7%) were enrolled in both a reading and math clinic, and three (5%) were enrolled in a math program. For special education services, five (9%) had been placed in special education programs during at least part of the school day. In addition, four children (7%) had been tested and identified as talented and gifted. Nonetheless, four years following preschool, the majority of 57 students (65%) received no special services.

When the socioeconomic status of children in special programs was reviewed a dramatic profile appeared. Half of the lower-income children (n = 15) were enrolled in compensatory programs, while only 19% (n = 5) of the middle-income age-mates received these services. Among compensatory school programs aimed exclusively at improving reading or math performance, 40% (n = 12) of the lower-income group were enrolled. Only 11% (n = 3) of the middle-class students received similar services at their

respective schools. When special education services were reviewed, three children from lower SES and two children from middle SES attended a resource room during part of their school day. Combined, the findings indicate that one out of every two lower-income children received some type of special assistance, while approximately one out of five middle-class children received special help from school programs.

Teacher evaluations of reading. Teachers were also asked to rate the current reading level of the target children as compared to their peers, using a 1 (well below grade level) through five (well above grade level) rating. As a group, the children earned a mean of 3.00 and a standard deviation of 1.47. When comparisons were made between the two socioeconomic groups, middle-class children outperformed their lower-income age mates. The mean performance for the middle-income group was 3.53 with a standard deviation of 1.11, while the lower-income group averaged 2.41 with a standard deviation of 1.24. Hence, teacher ratings of students' reading levels followed the trend of special services; a disproportionate number of lower-income children were reading below grade level. Overall, as a group, the 57 children were reading slightly below grade level, according to the spring evaluation of their teachers.

Standardized test scores for reading. Third grade reading comprehension subtest scores for the Iowa Test of Basic Skills were also requested for the 57 subjects. Four children had been retained and six were enrolled in special education programs and therefore, schools did not administered the tests to these populations. Scores were calculated from an April/May testing for the remaining 47 subjects. The mean score for the group was a grade equivalent of 3.7 with a standard deviation of 1.50. When the standardized test scores were compared between the two socioeconomic groups, a significant difference was found, $t(45) = -3.70$, $p = .001$. Middle-class children ($n = 22$) out performed their age mates with a mean of 4.44 and a standard deviation of 1.44. Lower-income children ($n = 25$) earned a mean of 3.00 and a standard deviation of 1.23. The mean for the group as a whole reflected a reading performance that was considered about average for third grade, spring testing.

Relationship between preschool knowledge and experiences with reading performance in elementary school. All relationships between children's performance on Mason's (1984) Strands 1 and 2

of reading acquisition and subsequent reading performance were significant ($p < .01$). Relationships between the initial strand and the third grade reading measures were $r = .50$ for grade equivalent scores and $r = .48$ for teacher evaluations. Strand 1 represented children's abilities to use contextual meaning in reading logos and environmental print. Preschoolers' explicit knowledge of print (Strand 2) proved to form a more substantial relationship with the reading performance variables of grade equivalent scores ($r = .63$) and teachers' evaluations ($r = .53$). The best single predicting variable was letter names with the ITBS reading scores ($r = .60$) and teacher evaluations ($r = .51$). Combining the two strands into a Total Literacy Assessment (TLA) produced a strong correlation with later reading achievement ($r = .65$ for ITBS scores; $r = .57$ for teacher evaluation). Scores on the parent literacy questionnaire correlated moderately with and ITBS scores ($r = .48$) and teacher evaluations ($r = .49$). Overall, the relationships between the emergent literacy knowledge that children bring to preschool and reading achievement, five years later were good. They were particularly impressive considering the long period of time between data collection and the substantial difference in assessment measures used.

The reading prognosis for preschoolers with limited emergent literacy knowledge. To understand how children's restricted knowledge of literacy might affect their reading performance five years later the profiles of four-year-olds with the lowest preschool assessment scores were reviewed ($n = 14$). The subjects were equally divided between males and females, with the majority representing lower-income homes (71%, 10/14). When their current reading performance was reviewed, 71% (10/14) were reading below grade level, according to teacher evaluations. Seventy-one percent (10/14) received special assistance or intervention in the regular elementary school program. Only 4 subjects were reading satisfactorily, three at grade level and one well above grade level. Hence, five years after the four-year-olds entered preschool with limited knowledge of print the majority were struggling to learn to read.

Profiles of the lowest Scoring Preschoolers' Emergent Literacy Knowledge. A closer look at the three lowest scoring preschoolers on the literacy measure unveiled a dramatic picture of the link between emergent literacy and subsequent reading achievement. The three preschoolers were two females and one male, all from the lower-class. When the children's preschool literacy protocols were

examined their performance on Strand 1 did not look unique. They were successful in identifying environmental print and literacy artifacts at a level comparable to their age mates. However, when their performance on Strand 2 was reviewed none of the four-year-olds were able to identify any letter names or sounds. When asked to write their names and other dictated words or short phrases their productions reflected a lack of awareness of alphabetic letters; their writing samples were uniformly immature. Two of the three children, produced simple lines and scribbles when asked to write their names or words like "cat". The third child produced only a few letter-like symbols. Figure 1 displays the writing sample of one of the lowest scoring preschoolers.

Five years following preschool, all three children were receiving compensatory services in reading; two also received additional services in a remedial math program. Teacher evaluations of the children's reading performance indicated they all read below grade level.

In sum, the profiles and data from low-scoring preschoolers on Strand 1 did not distinguish them from their age mates. This would support conclusions of others who have suggested that "print awareness is a common phenomenon... with no substantial differences between socioeconomic, racial, or linguistic groups" (Goodman, 1986; p. 7). On the other hand, the three preschoolers' performance on Strand 2 did indicate a generally lacked of awareness of alphabetic letters. As four-year-olds entering preschool, their inability to label or write letters, even their own names, separated them apart from other preschoolers.

The reading prognosis for preschoolers with advanced emergent literacy knowledge. The academic performance of four-year-olds scoring in the top quartile of the literacy measure (n = 14) was also reviewed. Eleven were female and three were males. All but three represented middle class homes. With the exception of one, all read at or above grade level according to teacher evaluations (93%, 13/14/). This particular student, a female, required special education services. According to her teacher, she attended a resource room during part of the day and read slightly below grade level. None of the students required any special assistance in reading. Hence, the vast majority of children who entered preschool with advanced understanding of literacy (93% ,13/14) had become successful readers five- years later.

Profiles of the Highest Scoring Preschoolers' Emergent Literacy Knowledge. The three highest scoring preschoolers presented a sharp contrast to the profiles of the three lowest scoring subjects. The top scores were earned by middle-class children, two females and one male. On the other hand, in Strand 1, the children's performance did not distinguish them from their age mates. They were able to correctly identify slightly more than half of the environmental print logos and artifacts. However, in Strand 2, their performance was impressive. The children showed sophisticated knowledge of alphabetic letters. They knew the names of most of the 26 letters (23, 19, and 24). They also were successful in identifying letter sounds (14, 2, and 18, respectively). Figure 1 contrasts the writing of one of these subjects with one of the lowest scoring preschoolers. When the highest scoring preschoolers were asked to write their names and other dictated words they each demonstrated advanced abilities with print. All three wrote using letter strings. One child wrote many of the dictated words. Another child wrote most of the beginning and ending consonants, while the third child used random strings of letters. Their written productions were uniformly sophisticated for four-year-olds. By third grade, all were considered advanced readers, two read well above average (teacher evaluations = 5) and one read slightly above grade level (teacher evaluation = 4).

Overall, the profiles of the top scoring preschoolers did not show exceptional performance in Strand 1. However, when performance in Strand 2 was reviewed their familiarity with alphabetic letters (recognizing and writing) was exceptional.

The reading prognosis for preschoolers with parent questionnaire scores in the lowest quartile. Thirteen preschoolers had parents who scored in the lowest quartile on the literacy questionnaire administered to parents in the first few weeks of preschool. Three were male and 10 were female with all 13 representing the lower-income group. Five years following preschool, all but two (85%, 11/13) were reading below grade level, one at grade level and the other slightly above. The female who read slightly above grade level also received special assistance in both the reading and math labs. When compensatory services for all 13 were reviewed, all but 2 (85%, 11/13) were enrolled in special programs. Hence, low scores on the parent questionnaire also appeared to indicate a future in which learning to read would be difficult and likely to require special assistance.

The reading prognosis for preschoolers with parent questionnaire scores in the highest quartile. Among the 13 preschoolers with parents who scored in the top quartile on the literacy questionnaire, 11 were from middle-income and two from lower-income homes. Six were male and seven were female. Five years following preschool 11 (85%) were reading at or above grade level. The two children that fell behind their peers represented each socioeconomic group. The middle-class male read well below grade level (teacher evaluation = 1), but had been placed in a special education classroom and labeled mentally retarded. The other lower-income female read slightly below grade level (teacher evaluation = 2; ITBS = 2.9) and received no special services.

Overall, long lasting benefits are suggested from reviewing the reading performance of students' who had parents that frequently involved them in print related activities before preschool. However, parent questionnaire scores seldom placed lower-income children in this group. Only two lower-income students were identified. Moreover, by third grade only one read satisfactorily. These findings corroborate a long held view that disproportionate numbers of children from lower income homes enter schools lacking experiences with print that are needed for successful literacy development.

Conclusions and Recommendations

Five years following the administration of the preschool assessment and parent questionnaire the academic performance of the 57 children suggests both promise and concern. Virtually all four-year-olds who entered preschool with advanced knowledge about print or rich literacy experiences did become good readers five years later, while many of their counterparts who came with restricted knowledge or experiences ended up struggling. Indeed, approximately three-quarters of the preschool enrollees with scores in the lowest quartiles showed unsatisfactory performance in reading by third grade. These findings enhance the current literature on emergent literacy; young children who enter preschool with more rather than less knowledge and experiences with print are likely to do better in learning to read.

Examining specific literacy concepts that four-year-olds brought to preschool revealed no substantial differences in their understanding of Mason's (1984) initial strand, function of print. All preschoolers, whether they fell in the lowest or highest quartiles, could identify a majority of the

environmental print pictures, logos, and literacy artifacts. No unique pattern was found in the four-year-olds print awareness. In contrast, notable differences were reported among the preschoolers in their explicit knowledge of print (Strand 2), particularly with alphabetic letters. The most advanced preschool enrollees, who later became successful readers, demonstrated a broad familiarity with alphabetic symbols; they were able to name and write several. The least advanced preschoolers showed little awareness of letters. They seldom produced letters or letter-like forms and their ability to provide appropriate names was severely limited.

Although considerable controversy has surrounded the value of letter names and learning to read these findings would suggest familiarity with letters is important in emergent literacy. Preschool enrollees who produced and named several letters may have demonstrated that a 'literacy connection' had been established; an explicit awareness of the importance of letters and that they are used by others. The link with letters may be a particularly valuable in early concepts that lead to successful reading acquisition. However, because of the correlational nature of this study a cause-effect relationship can not be concluded. Nonetheless, from a speculative viewpoint, as young children find meaning in print they focus on the symbols, identifying some of their names and producing the corresponding shapes. This sensitivity toward letters might serve as the impetus that draws young children to experiment further with print. Exploration of print would seem more likely to be initiated by children who recognize, name and can use a few letters. Mason (1980) reported that writing seemed to accompany preschoolers' increasing interest in naming and recognizing letters. The evidence from this study provides further support for early efforts to involve young children, even before they enter preschool, with meaningful experiences that involve alphabetic letters. Such experiences would include encouraging children to write and while reading to children, to point out words and even letters in the story books.

Although the study covered five years an important limitation was that the children's literacy experiences were not examined in the years between preschool and third grade. Furthermore, during those years the educational experiences of the 57 children were believed to vary greatly. In the final year of the study, the children's mostly third grade teachers were requested to describe their method of

instruction for reading, spelling, and writing. Wide variability in instruction was reported with some programs encouraging children to read for meaning while others focused on reading for accuracy with a strong phonics component. Some teachers reported an emphasis on writing, while others reported that writing was seldom used except to copy spelling words and sentences written by the teacher.

Clearly, there were wide differences in the children's educational experiences. However, the differences may have played a minor role. Juel (1988) suggested, in her longitudinal study of reading performance, that the method of instruction does not affect the trend that good first grade readers become good fourth grade readers and poor first grade readers become poor fourth grade readers. She cited several studies that have also reported this trend in reading performance (Clay, 1979; Lundberg, 1984) and notes the profound differences in the reading programs of children in these different studies. Juel argued "...despite...method of instruction...a child who does poorly in reading in the first year is likely to continue to do poorly "(p. 444). As a result, the particular method of instruction experienced by the children in their elementary years may have had little impact on their reading achievement. The trend found in the current study, like those reported in the other studies, persists regardless of how reading is taught.

Finally, the literacy development of children from lower-income homes presents a distinct and foreboding concern. These children were disproportionately represented in the lowest quartile of the preschool assessment. Furthermore, the lowest scores on the parent literacy questionnaire all belonged to the poor. These findings continue to support the need to help young children in poverty. Qualitative and quantitative differences were noted in the literacy experiences of lower- and middle- income families. As a group, poor children are likely to receive fewer story book readings and have less access to appropriate materials than their middle-class counterparts. Perhaps some of these differences can be better understood by examining parents' views of reading. Many parents, particularly lower-income, still hold the notion that learning to read is something children learn in elementary school. Parent practices are unlikely to improve without eradicating this myth. Clearly, more insight is needed to determine how to promote the literacy development in the homes of young children living in poverty.

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Table 1

Means and (Standard deviations) of Preschoolers' Literacy Knowledge and Experience (N = 57)

Variable	M	SD
Strand 1	21.12	4.82
Environmental print (10 points)	4.91	1.94
Identification of artifacts (10 points)	2.90	1.59
Function of artifacts (10 points)	4.28	1.74
Readable print (15 points)	9.04	2.01
Strand 2	27.08	15.58
Letter names (26 points)	6.02	6.99
Letter sounds (26 points)	1.02	3.08
Dictated Writing (48 points)	15.95	6.88
Blending syllables/phonemes (10 points)	4.11	2.42
Total Literacy Assessment (155 points)	56.85	20.86
Parent Emergent Literacy Questionnaire (49 points)	32.61	6.8

Figure Caption

Figure 1. Dictated writing samples from the lowest and highest scoring preschoolers

1. THOMAS

2. CAT

3. RADLAE

4. MYMOM

5. BIGFOOE

6. SAEORGOOS

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